UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY

BIDS AND AWARDS COMMITTEE

20 December 2021

SUPPLEMENTAL BID BULLETIN NO. 21-026

This Supplemental Bid Bulletin No. 21-026 is to amend or modify items in the Bid Documents and in response to the queries raised during the pre-bid conference conducted on 14 December 2021 for "Supply, Delivery and Installation of Fiber Optic Network from UPOU HQ Main Bldg. to the Teaching and Learning Hub" to wit:

1. The location of the cabling room in the Main building is on the second floor. While in the TLH building, it is located in the ground floor.

2. Updated Section VII. Technical Specifications is attached.

This supplemental bid bulletin signed by the bidder shall be submitted along with the other technical component documents.

For the guidance and information of all concerned bidders.

Dr. PRIMO G. GARCIA
Chair, BAC

Received by the Bidder:

_____ Date: _____
Signature over printed name

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Section VII. Technical Specifications

Item	Specification	Statement of Compliance
1	**I. Overview** These Terms of Reference (TOR) call for the supply and installation of a Fiber Optic network, with related construction/fabrication and civil works, between key buildings in UP Open University Campus, notably: UPOU Main building and Teaching and Learning Hub (TLH) Bldg. (300 meters 8 cores singlemode fiber optic cable) This shall include the supply, installation and testing of high-quality fiber optic cable (FOC), related cabling hardware, outlets, cable trays, racks, interconnect hardware, or any applicable or necessary materials, supplies or hardware, as well as construction, fabrication, restoration or other works necessary to undertake and complete the installation to the satisfaction of the End-User.	
2	**II. Breakdown of Required Materials and Labor** 1. **Fiber Optic Cable** A. **Length**: 300 meters B. **Features**: suitable for outdoor duct/buried installation, water-blocking, single-jacket/single metallic armor, polyethylene (PE) sheath or Low Smoke, Zero Halogen (LSZH) with fire-retardant sheath, steel wire or Fiber Reinforced Plastic (FRP) as central dielectric strength member. C. **Optical Characteristics**: Singlemode fiber 9μm; Attenuation: @1310nm ≦0.4dB/kilometers, @1550nm ≦0.3dB/kilometers; Cladding Diameter 125 ± 1μm; Coating Diameter:245± 5μm D. **Mechanical Characteristics**: a. **Fiber Count**: 8 cores b. **Sheath Material**: LSZH / PE c. **Maximum Allowable Pulling Force**: 2700 Newtons (Installation), 890 Newtons (Operation long-term). Must meet or exceed ISO 11808, ICEA-640 or Telcordia GR-20 standards E. **Additional Characteristics**: a. All fibers shall be 100% attenuation-tested, with tests provided at cable reel. b. Cable manufacturer must be ISO 9001-registered	

2. **Optical Distribution Frame, 12 Ports LC**
   A. **Features**: Wall-mount enclosure with LC-UPC duplex ports
3. **Network Switch**
   A. 52-port L3 Manageable Gigabit Switch
      a. **Quantity**: 1 unit
      b. **Standard Protocols**: IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE802.3z, IEEE 802.3ae, IEEE 802.3ad, IEEE 802.3az, IEEE 802.3x, IEEE 802.1d, IEEE 802.1s, IEEE 802.1w, IEEE 802.1q, IEEE 802.1x, IEEE 802.1p
      c. **Interface**: 48 10/100/1000Mbps RJ45 Ports; (Auto Negotiation/Auto MDI/MDIX); 4 Combo Gigabit SFP Slots; Up to 4 10G SFP+ Slots (2 fixed and 2 optional); 1 Micro-USB, 1 RJ45 Console Port; 1 Management Port; 1 USB Slot
      d. **Network Media**: 10BASE-T: UTP category 3, 4, 5 cable (maximum 100m); 100BASE-TX/1000Base-T: UTP category 5, 5e or above cable (maximum 100m); 100BASE-FX: MMF, SMF; 1000BASE-X: MMF, SMF; 10GBASE-LR; 10GBASE-SR
      e. **Compatible Transceiver Module**:
         i. **Quantity**: 1 unit
         ii. **Standard and Protocol**: IEEE 802.3ae
         iii. **Fiber Type**: 9/125um single-mode
         iv. **Port Type**: LC/UPC
         v. **Data Rate**: 10Gbps
   B. 24-port Manageable Gigabit Switch
      a. **Quantity**: 1 unit
      b. **Network Technology**: 1000Base-T, 10GBase-X
      c. **Interface**: 24 x Gigabit Ethernet Network, 4 x 10 Gigabit Ethernet Expansion Slot (SFP+)
      d. **Compatible Transceiver Module**:
         i. **Quantity**: 1
         ii. **Fiber Mode Supported**: Single-mode
         iii. **Connector Type**: LC
         iv. **Data Rate**: 10Gbps
4. **Rough-ins**
   A. Conduits (outdoor)
   B. Fittings: to match conduit and material, corner sweeps should use long radius elbow.
   C. Pull box with Cover

5. **Labor**
   A. Cable Laying and Pulling
   B. LC-Type Splicing and Termination
   C. Installation, restoration and Roughing-ins of cable runways, pipes, clips, etc.
   D. Installation of Fiber Optic Housing Hardware, LIU's and other related equipment.
   E. Testing and Documentation
6. **Codes and Standards**
   A. Work shall be installed according to the latest Philippine Electric Code (PEC), Plumbing Code, National Structural Code of the Philippines, Fire Code of the Philippines, the National Building Code and the "Compilation of Building Telecommunication Cabling Systems for Philippine Standards by BICSP".
   B. Minimum technical standards covering the inter-building fiber-optic cable system shall adhere to, but are not limited to the following standards:
      a. Optical Fiber Optic Cabling and Components:
         i. ANSI/TIA/EIA-568-C.0, Generic Telecommunications Cabling for Customer Premises
         ii. ANSI/TIA/EIA-568-C.1, Commercial Building Telecommunications Cabling Standard
         iii. ANSI/TIA/EIA-568-C.3, Optical Fiber Cabling Components
      b. Telecommunication Pathways
         i. ANSI/TIA/EIA-568-B, Commercial Building Standard for Telecommunications Pathways and Spaces
      c. Grounding and Bonding
         i. Philippine Electrical Code
         ii. ANSI J/STD-607-A-2002, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
      d. Administration and Labeling
         i. ANSI/TIA/EIA-606A-2002, Administration Standard for Commercial Telecommunications Infrastructure

3	**III. FOC INSTALLATION, DOCUMENTATION AND TESTING** 1. **Setup and Execution:** A. Contractor shall perform all items of work under the terms of reference; all equipment, labor, machinery, materials, tools, supplies, transportation and incidental expenses necessary to prosecute the work to completion shall be shouldered by the Contractor. B. Safety Measures: contractor is required to install warning signs and barricades for the safety of the general public. All workers shall wear the necessary safety devices to ensure safety and proper identification throughout the project. C. Identification and campus ingress/egress: contractors are required to submit the list of the names of their workers, machinery and vehicles that will be entering campus premises to the Office of the Vice Chancellor for Community Affairs, UP Police or offices of similar nature. D. Contractor shall observe proper pulling and bending of fiber optic cable at all times during installation to prevent kinking, damaging or shortening the life of the cable. The minimum bend radius for both inside and outside the cable is 20 times the cable outside diameter while the maximum tensile load during installation is 2,700 Newtons. E. Cable Slack: A minimum of three (3) meters (or 10 feet) slack should be provided on both ends. The slack should be neatly organized and stored in an extended loop. F. Singlemode fiber optic backbone cable shall be spliced through the electric arc fusion splicing method, using proper protection sleeves and enclosures to protect the splices. The maximum splice loss must not exceed 0.5dB. G. Singlemode fiber optic backbone cables shall be terminated into 568SC connector by splicing a factory-made “pigtail” onto the fiber. The connector must exhibit a maximum insertion loss of 0.75dB 2. **Testing Procedures:** A. Testing of cable channels shall be performed prior to system cut over. Length shall be tested using an OTDR, optical length test measurement device or sequential cable measurement markings. Attenuation shall be tested at 1310 nm and 1550 nm for single mode fiber in at least one direction using the 1-jumper test procedure as specified in ANSI/TIA/EIA-526-14A and ANSI/EIA/TIA-526-7.	

	3. **Submittals:** The contractor shall provide three (3) sets of the following, upon project turn-over: A. Operation Manual(s) (if applicable) B. Fiber Optic Cable Test Reports; and C. As-Built Plan	

Notes:

- *Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered.*